



# FISHERIES ANNUAL REPORT 2019





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**BUREAU OF FISHERIES AND AQUATIC RESOURCES**  
PCA Compound, Elliptical Road, Quezon City



# MESSAGE

**WILLIAM D. DAR**  
DA Secretary

The fisheries sector posted a remarkable growth in 2019, sustaining its positive performance in the previous year.

Among the drivers to this growth were favorable weather, increased use of fish aggregating devices, better quality of planting materials and, most importantly, greater synergies between the Bureau of Fisheries and Aquatic Resources (BFAR), local government units and other pertinent actors of the food chain.

Needless to say, we must harness the upward growth of the fisheries sector if we want the full potential of agriculture to be realized.

To sustain these modest gains, we need to evaluate our current progress, the current best practices we have to further adopt and bottlenecks we need to conquer. Developing a well-informed assessment will require the availability of timely and credible data.

This report serves this goal as it provides a rich trove of data that give a comprehensive picture of our fisheries sector, from municipal and commercial production per commodity per area, to export and imports. It also collates latest available data on consumption, world production trends and prices, among others.

I laud the BFAR for its consistent effort to create this annual report and I hope the information here will prove valuable and have practical use to all fisheries stakeholders.

Mabuhay and mga magsasaka at mangingisdang Pilipino!

**WILLIAM D. DAR, Ph.D.**  
Secretary

*"A food-secure Philippines with prosperous Farmers and Fisherfolk"*



# FOREWORD

**EDUARDO B. GONGONA**  
DA-BFAR National Director



The Department of Agriculture's Bureau of Fisheries and Aquatic Resources (DA-BFAR) is continuously pushing towards sustainable fishing and conservation initiatives that aimed at leveling up the Philippine fisheries sector.

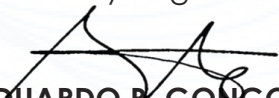
Anchored on the DA's banner slogan Masaganang Ani at Mataas na Kita, the DA-BFAR tailor-fitted current programs and initiated new ones that ultimately redound to the betterment of the fisheries industry in 2019. These include but are not limited to fisheries development programs, post-harvest, law enforcement, and initiatives to create policies that seek to improve the management of the country's fisheries and aquatic resources.

For 2019, the Philippine fishery sector demonstrated an increase of 1.3 percent in volume and 1.5 percent in value of production. These positive outcomes are made possible by our strong cooperation and partnerships with fishery stakeholders, particularly the fisherfolk; partner government agencies; non-governmental organizations, academe; and other relevant institutions. With our concerted efforts to promote modern and sustainable fishing practices along with our strong commitment to prevent and eradicate illegal and unsustainable fishing practices, we hope to maintain or even exceed these successes to further boost fish production and contribute greatly to food sufficiency for all Filipinos.

I am truly grateful for what we have achieved in the year 2019. This sets the mark that our efforts are making a difference in achieving Malinis at Masaganang Karagatan. I would also like to extend my commendation to all the men and women behind DA-BFAR across the country. Your immeasurable dedication and expertise are the ones that keep the Bureau going.

With these, I enjoin everyone to make use of our best abilities to serve our clients in the fishery sector. Let us live up to the high standard that we have set upon ourselves when our Quality Management System received ISO 9001:2015 certification. Through hard work and working partnerships, we will soon realize a food secure Philippines with prosperous farmers and fisherfolk.

Mabuhay ang sektor ng pangisdaan!

  
**EDUARDO B. GONGONA**  
DA-BFAR National Director



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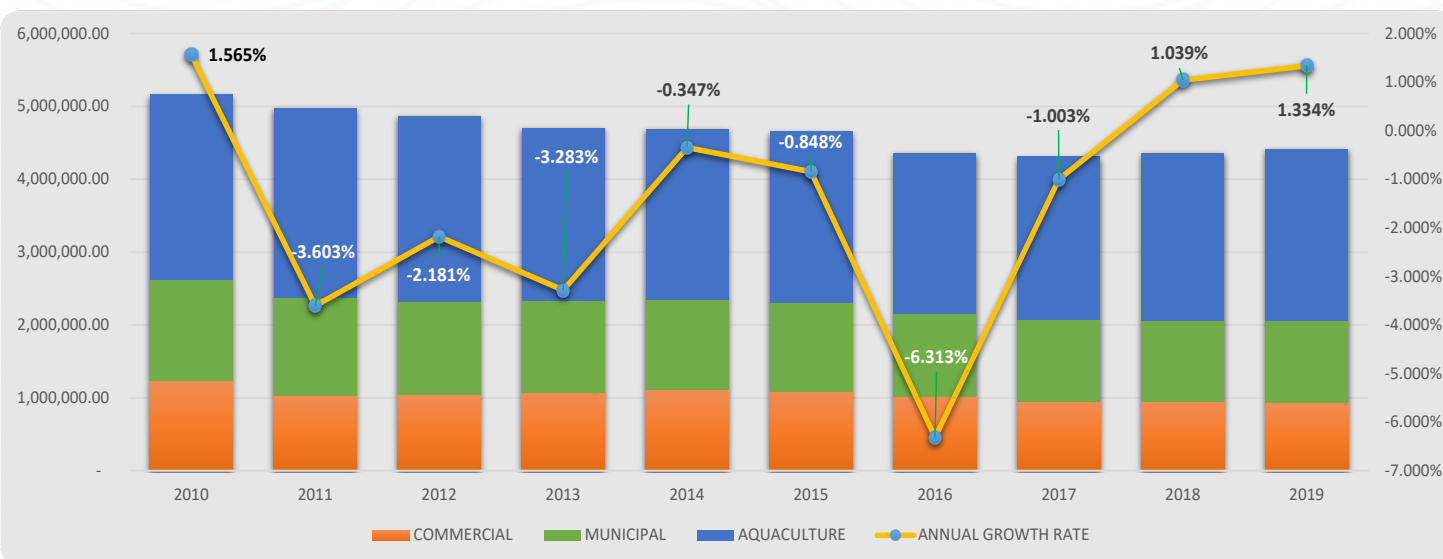
## 2019 Fisheries Production Situationer

**Table 1. Volume of Fisheries Production, 2010 to 2019**

	2010	2011	2012	2013	2014
<b>FISHERIES</b>	<b>5,159,458.68</b>	<b>4,973,587.75</b>	<b>4,865,132.30</b>	<b>4,705,413.30</b>	<b>4,689,084.70</b>
Commercial	206.58	209.85	201.38	948.28	946.44
Municipal	268.84	280.76	281.40	1,126.02	1,106.07
Aquaculture	722.76	753.48	789.79	2,237.79	2,304.37
<b>ANNUAL GROWTH RATE</b>	<b>1.565%</b>	<b>-3.603%</b>	<b>-2.181%</b>	<b>-3.283%</b>	<b>-0.347%</b>

Source: PSA

Note: For the effect of the COVID 19 crisis, there is a 17 % deduction in the 2 weeks production of the Municipal Sector.



The figure exhibits the 10 year historical trend of fisheries data from 2010 to 2019. This shows a generally decreasing trend in the volume of production until 2017. Meanwhile, positive growth was recorded starting 2018. The highest production was registered in 2010 with 5.2 million metric tons while the lowest was observed in 2017 with only 4.3 million metric tons. Moreover, negative growth rates were experienced from 2011 to 2017. The decline in production is mainly attributed to the impacts of changing climatic conditions as well as the strict implementation of the newly amended fisheries law, the RA8550 (as amended by RA10654).

2015	2016	2017	2018	2019
<b>4,649,312.63</b>	<b>4,355,792.42</b>	<b>4,312,089.51</b>	<b>4,356,874.77</b>	<b>4,415,001.68</b>
931.45	1.6	(4.0)	(0.2)	(1.6)
1,106.07	4.4	0.2	(1.8)	1.7
2,304.37	4.3	4.8	3.0	2.3
<b>-0.848%</b>	<b>-6.313%</b>	<b>-1.003%</b>	<b>1.039%</b>	<b>1.334%</b>

Compared with other agricultural sectors (crops, livestock, and poultry), the fisheries is one of the sectors which posted a positive increase in both 2019 volume and value at 1.3 percent and 1.5 percent, respectively. In 2019, it was able to produce a total volume of 4.4 million metric tons valued at PhP269.4 billion at 2018 constant prices of various fish species (Table 1).

**Table 2. Agriculture Sectoral Production Performance by Volume and Value, 2018-2019**

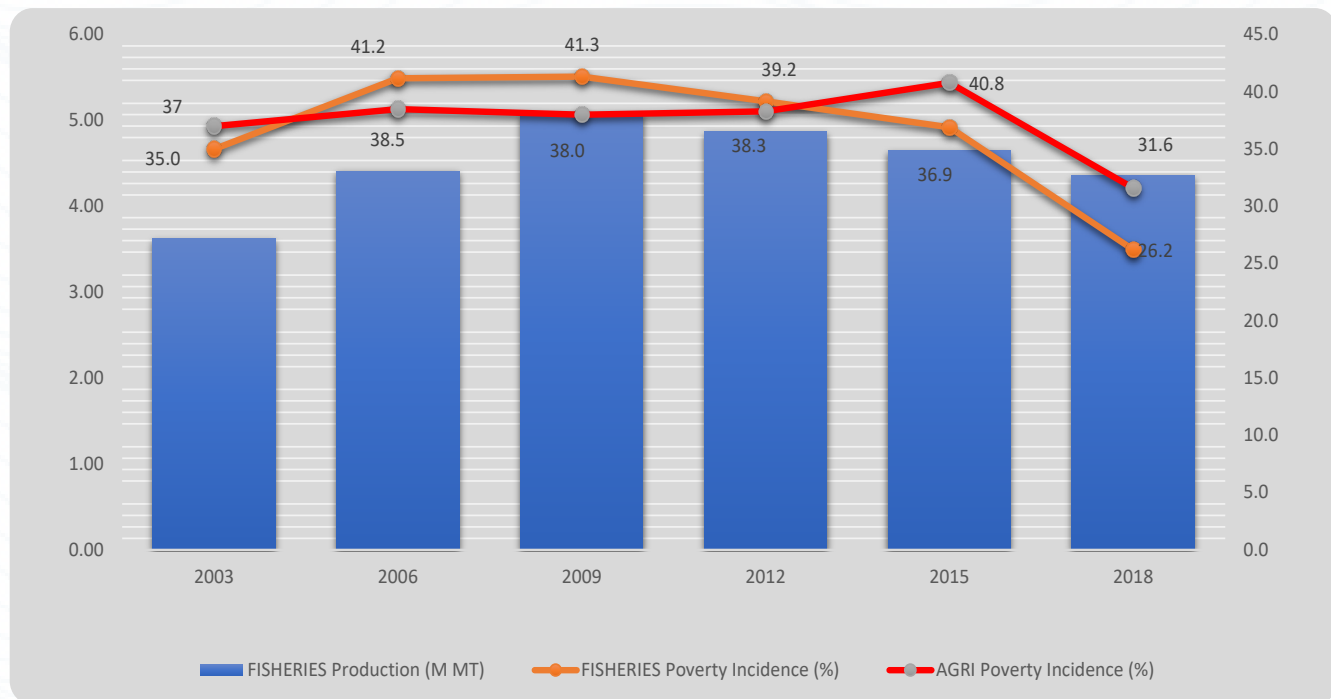
AGRICULTURAL SECTOR	VOLUME ('000 MT)		VALUE at constant prices (million pesos)		Percent Change	
	2018	2019	2018	2019	Volume	Value
					19/18	19/18
<b>TOTAL</b>	<b>104,862</b>	<b>100,703</b>	<b>1,806,368</b>	<b>1,806,368</b>	<b>-4.0</b>	<b>0.3</b>
Crops	95,254	90,928	977,945	968,111	-4.5	-1.0
Livestock	2,803	2,774	331,420	328,105	-1.0	-1.0
Poultry	2,448	2,590	231,655	245,281	5.8	5.9
Fisheries	4,357	4,415	265,349	269,415	1.3	1.5

Retrieved September 17, 2020 from Philippine Statistics Authority

**Table 3. Poverty Incidence vs Production 2003-2018**

	2003	2006	2009	2012	2015	2018
<b>FISHERIES Production (M MT)</b>	<b>3.62</b>	<b>4.41</b>	<b>5.08</b>	<b>4.87</b>	<b>4.65</b>	<b>4.36</b>
FISHERIES Poverty Incidence (%)	35.0	41.2	41.3	39.2	36.9	26.2
AGRI Poverty Incidence (%)	37	38.5	38.0	38.3	40.8	31.6

The Agriculture and Fisheries Industries exhibited generally increasing trends in volume of production, as well as decreasing trends in the poverty incidence from 2003 to 2018. For the period of 2003 to 2012, the Fisheries Industry showed higher poverty incidence than that of the Agriculture Industry. However, from the year 2015, the Agriculture Industry's poverty incidence exceeded the Fisheries Industry's. In 2018, the poverty incidence of the fisheries sector went down to 26.2 from 36.9 in 2015.

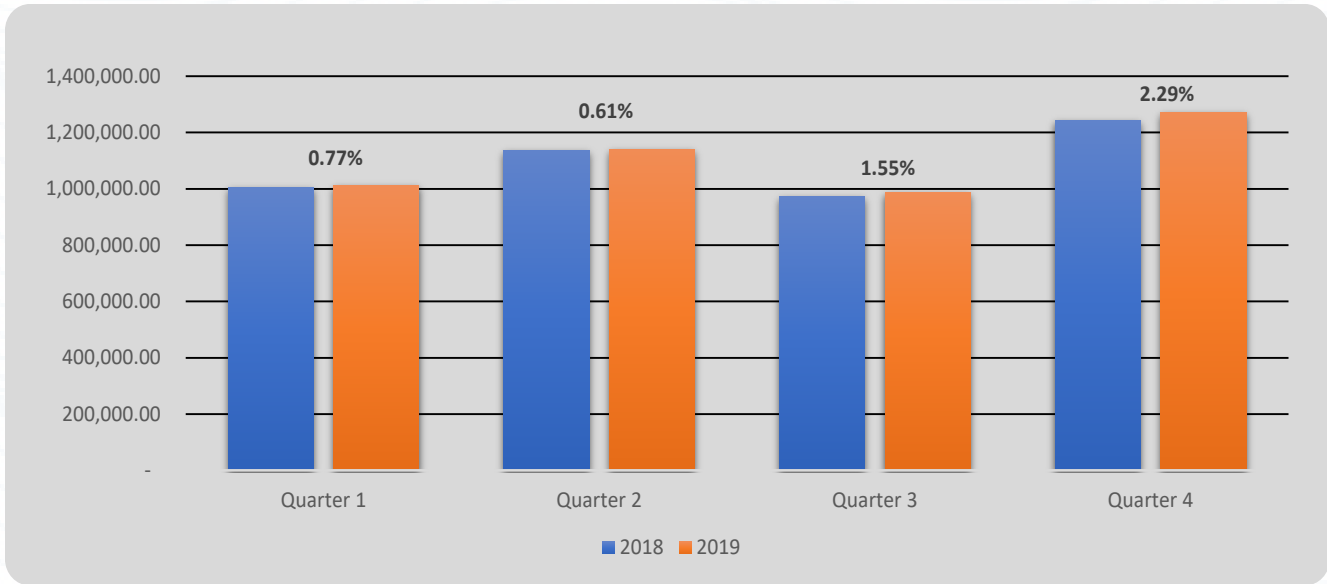


**Figure 1. Poverty Incidence vs Production 2003-2018**

Total fish production increased by 1.33 percent from 4.356 million metric tons in 2018 to 4.415 million metric tons in 2019. All quarters exhibited increase in production from 2018 to 2019. Wherein, 4th quarter production showed the highest growth with 2.29 percent followed by 3rd quarter production with 1.55 percent increase. Moreover, 1st quarter production grew by 0.77 percent, while the 2nd quarter production demonstrated the smallest growth with of 0.61 percent.

**Table 4. 2018-2019 Volume of Production by Species, Geolocation, Year and Quarter**

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
<b>2018</b>	1,005,325.09	1,134,749.07	972,709.33	1,244,091.28	4,356,874.77
<b>2019</b>	1,013,041.13	1,141,646.29	987,741.48	1,272,572.77	4,415,001.68
<b>GROWTH RATE</b>	<b>0.77%</b>	<b>0.61%</b>	<b>1.55%</b>	<b>2.29%</b>	<b>1.33%</b>



**Figure 2. Quarterly Production 2018 vs 2019**



Moreover, a 1.33 percent increase in the total annual volume of production was recorded in 2019 (Figure 2) where a total of 4,415 M MT was produced in 2019 compared to the 4,357 M MT in 2018.

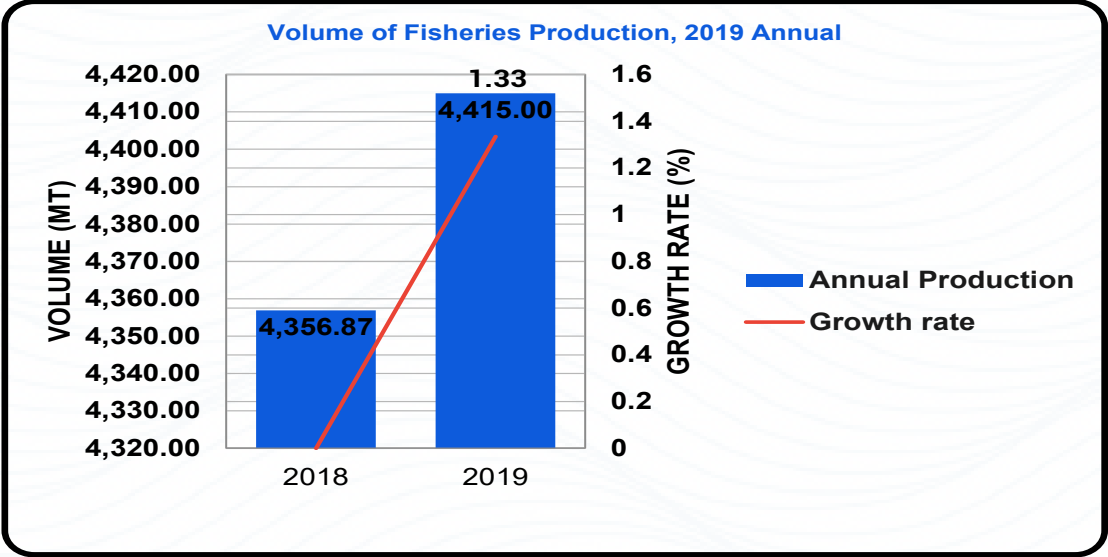


Figure 3. Volume of Fisheries Production, 2019 Annual

The remarkable performance of the sector is largely attributed to the growth of both the municipal and aquaculture subsectors (1.7% and 2.3%, respectively) and also in all of the major species (Table 2).

Table 5. Volume of Fisheries Production by Sub-Sector, 2017-2019 (in MT)

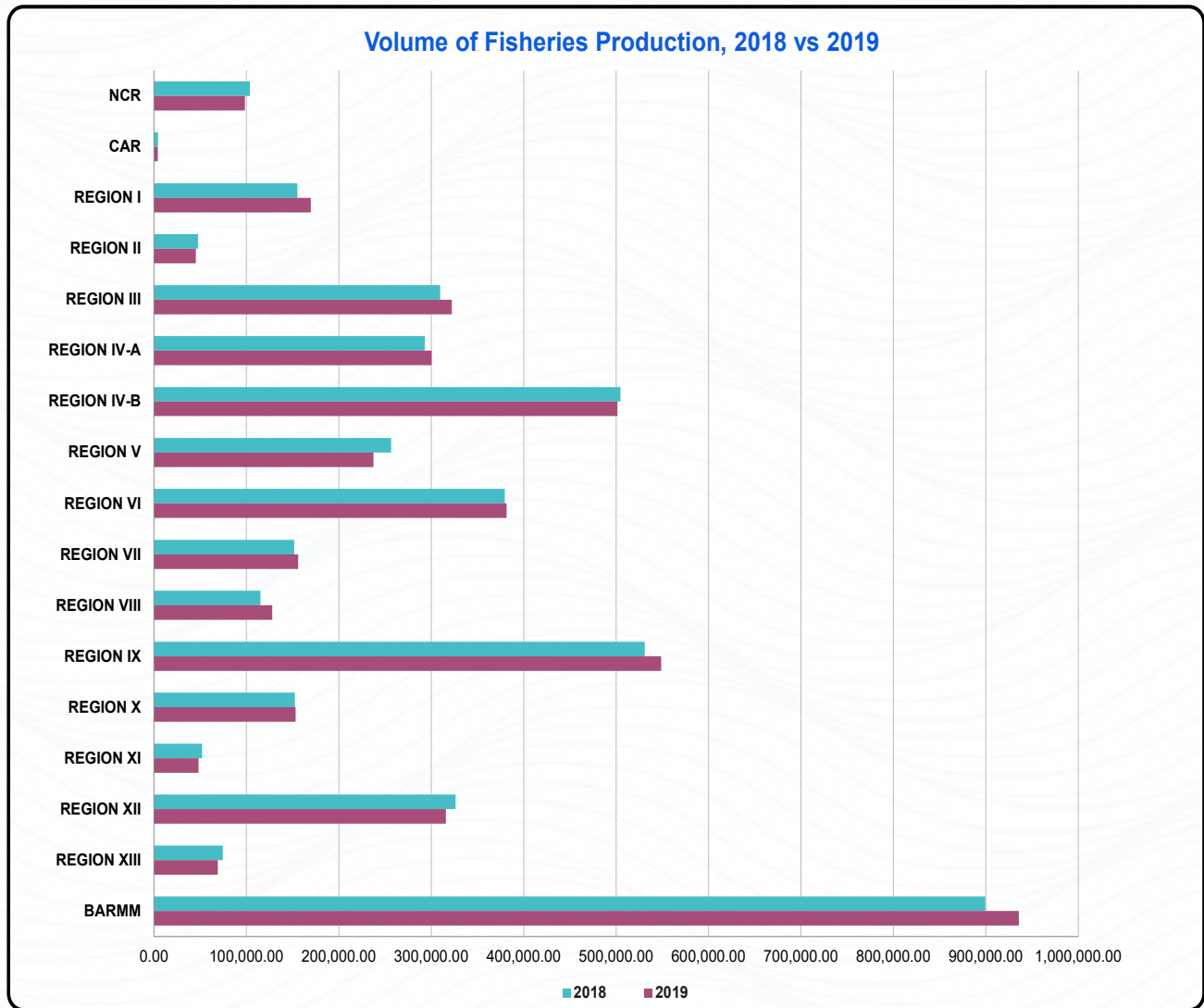
Sub-Sector	Jan-Dec			% Charge			
				Oct-Dec		Jan-Dec	
	2017	2018	2019	18/17	19/18	18/17	19/18
<b>FISHERIES</b>	4,312.09	4,356.87	4,415.00	3.8	2.3	1.0	1.3
Commercial	948.28	946.44	931.45	1.6	(4.0)	(0.2)	(1.6)
Municipal	1,126.02	1,106.07	1,106.07	4.4	0.2	(1.8)	1.7
Aquaculture	2,237.79	2,304.37	2,304.37	4.3	4.8	3.0	2.3

**Table 6. Fisheries Production by Region, 2018-2019**

REGION	Production (in MT)		Percent Change
	2018	2019	
Philippines	4,356,874.77	4,415,001.68	1.33%
NCR	103,882.87	98,414.72	-5.26%
CAR	4,418.80	4,176.96	-5.47%
Region 1	155,178.25	169,668.66	9.34%
Region 2	47,572.50	45,382.03	-4.60%
Region 3	309,582.19	322,164.34	4.06%
Region 4A	293,077.22	300,391.66	2.50%
Region 4B	504,666.97	501,319.72	-0.66%
Region 5	256,589.96	237,512.84	-7.43%
Region 6	379,471.91	381,415.31	0.51%
Region 7	151,633.90	155,856.62	2.78%
Region 8	115,153.08	128,013.72	11.17%
Region 9	531,032.30	548,651.71	3.32%
Region 10	152,483.90	153,264.36	0.51%
Region 11	51,983.43	48,245.89	-7.19%
Region 12	326,318.50	315,786.21	-3.23%
CARAGA	74,454.72	69,029.25	-7.29%
BARMM	899,374.27	935,707.67	4.04%

As shown in Table 3 and Figure 3, the Bangsamoro Administrative Region of Muslim Mindanao (BARMM) produced the largest volume among the regions. It exhibited a 4.04 percent increase in production from 899.37 thousand MT in 2018 to 935.71 thousand MT in 2019. It is followed by Zamboanga Peninsula (Region IX) with 548.65 thousand MT which exhibited a 3.32 percent growth from 531.03 thousand MT in 2018. Meanwhile, MIMAROPA Region (Region IV-B) also exhibited a significant contribution to the total production but it showed a 0.66 percent contraction in the production from 504.67 thousand MT in 2018 to 501.32 thousand MT in 2019.

On the other hand, Cordillera Administrative Region (CAR) recorded the lowest production with 4.42 thousand MT in 2018 and 4.18 thousand MT in 2019, which is due to the limited bodies of water in the region. Aside from that, Davao Region (Region XI) and Cagayan Valley (Region II) have also exhibited low volume of productions in 2019 with only 48.25 thousand MT and 45.38 thousand MT, respectively. Both of the regions suffered a decrease in the volume of production from 2018 to 2019.



**Figure 4. Volume of Fisheries Production, 2018 vs. 2019**

## Growth Rates by Species

Major species	October to December			January to December		
	2017	2018	2019	2017	2018	2019
<b>FISHERIES</b>	1,198,180.79	1,244,091.28	1,272,572.77	4,312,089.51	4,356,874.77	4,415,001.68
Milkfish	127,405.38	128,743.68	135,185.44	416,363.17	400,118.78	414,944.25
Tilapia	76,827.03	83,300.82	89,399.57	310,974.80	321,076.58	321,187.79
Tiger Shrimp	15,043.08	15,048.60	16,348.33	46,157.00	44,884.45	46,003.98
Roundscad	30,840.42	32,255.27	30,173.35	183,077.67	171,306.41	189,003.22
Skipjack	61,885.64	63,502.06	70,767.46	247,593.66	258,375.05	266,375.69
Yellowfin Tuna	28,775.26	23,906.51	26,326.23	106,920.07	94,437.19	99,351.27
Seaweed	490,080.06	512,649.60	532,083.22	1,415,320.79	1,478,300.85	1,499,961.25
Other Fisheries	367,323.92	384,684.74	372,289.17	1,585,682.35	1,588,375.46	1,578,174.23

Units: metric tons (MT)

Source: Philippine Statistics Authority, Retrieved September 17, 2020

Major species	Percent Charge			
	October to December		January to December	
	18/17	19/18	18/17	19/18
<b>FISHERIES</b>	3.83	2.29	1.04	1.33
Milkfish	1.05	5	-3.9	3.71
Tilapia	8.43	7.32	3.25	0.03
Tiger Shrimp	0.04	8.64	-2.76	2.49
Roundscad	4.59	-6.45	-6.43	10.33
Skipjack	2.61	11.44	4.35	3.1
Yellowfin Tuna	-16.92	10.12	-11.67	5.2
Seaweed	4.61	3.79	4.45	1.47
Other Fisheries	4.73	-3.22	0.17	-0.64



## Milkfish



Milkfish grew by 3.71 percent from 2018 to 2019 since there was an increase in stocking rate because of the availability of stocking materials in Western Visayas. High survival rate of fingerlings and fewer incidence of fish kill were recorded in CALABARZON. In Central Luzon, bigger sizes of

milkfish were harvested and some ponds resumed operation due to higher demand of fish species. In addition, there were more harvested areas because of high market demand for milkfish in Ilocos Region, CALABARZON and Western Visayas.

## Tilapia



Tilapia production increased by 0.03 percent in 2019 from around 321 thousand MT in 2018, which may be due to the high survival rate of tilapia fingerlings stocked in freshwater cages in CALABARZON. Increase in area harvested was

reported in Western Visayas.

## Tiger Shrimp



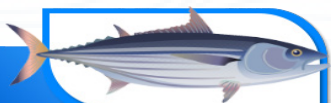
Tiger prawn posted a 2.49 percent increment in production. There were reports of high survival rate of stocks/fry due to good quality of fry and normal salinity of water in Central Luzon and Bicol Region.

## Roundscad



Production of roundscad registered a 10.33 percent increase during the period of 2018 to 2019. This may be due to the continuous implementation of closed fishing season for roundscad that may result in open growth in the area.

## Skipjack



Skipjack production expanded by 3.10 percent this period. Increased number of fishing vessels unloading skipjack for canneries was reported in SOCCSKSARGEN. In Zamboanga Peninsula, there was increased unloading as a result of the establishment of a Fish Aggregating Device along

Basilan Strait in Sibago Island that served as a fish shelter. Bigger sizes of the species caught beyond the municipal fishing grounds were noted in Central Luzon.



## Yellowfin Tuna



Zamboanga Peninsula was also attributed to the Fish Aggregating Device placed along Basilan Strait in Sibago Island. Bigger sizes of fish catch and more fishing trips because of good weather conditions were also reported in Zamboanga Peninsula and BARMM.

Yellowfin tuna recovered from last year's negative growth and recorded a 5.20 percent increase in production this period. In SOCCSKSARGEN, there were more unloadings of the species due to the increased demand for canneries. Higher volume of catch in the

## Seaweed



operating capital, and interventions from Local Government Units (LGUs) were reported in BARMM. More operators engaged in seaweed farming, lesser occurrence of "ice-ice" disease and good quality of harvests during the period contributed to the increment in seaweed production in Zamboanga Peninsula.

A 1.47 percent increment was noted in seaweed production. Better quality of planting materials provided by the Bureau of Fisheries and Aquatic Resources (BFAR) was cited in MIMAROPA Region. Lesser weather disturbance, proper application of fertilizers, increased seaweed farming efforts and

## Other Fisheries



in CALABARZON, Bicol Region and SOCCSKSARGEN. Reduction in Bali sardinella production was also noted. This was traced to smaller sizes of the species unloaded in the Zamboanga Peninsula. In addition, lesser fishing activities caused by the rough seas and strong winds brought about by "Amihan" and Typhoon "Ulysses" (Tisoy) in November 2020 were recorded in different parts of Luzon.

Production of "other fisheries" went down by 0.64 percent from 2018 to 2019. Lesser unloadings of Frigate tuna due to the lesser appearance of the species in the fishing grounds and lesser fishing trips due to bad weather conditions were reported

**Table 7. Volume of Fisheries Production by Major Species, 2017-2019 (in '000 MT)**

Major Species	Jan-Dec			% Change			
				Oct-Dec		Jan-Dec	
	2017	2018	2019	18/17	19/18	18/17	19/18
<b>Fisheries</b>	<b>4,312.09</b>	<b>4,356.87</b>	<b>4,415.00</b>	<b>3.83</b>	<b>2.29</b>	<b>1.04</b>	<b>1.33</b>
Milkfish	416.36	400.12	414.94	1.05	5.00	(3.90)	3.71
Tilapia	310.97	321.08	321.19	8.43	7.32	3.25	0.03
Tiger Prawn	46.16	44.88	46.00	0.04	8.64	(2.76)	2.49
Roundscad	183.08	171.31	189.00	4.59	(6.45)	(6.43)	10.33
Skipjack	247.59	258.38	266.38	2.61	11.44	4.35	3.10
Yellowfin Tuna	106.92	94.44	99.35	(16.92)	10.12	(11.67)	5.20
Seaweed	1,415.32	1,478.30	1,499.96	4.61	3.79	4.45	1.47
Other Fisheries	1,585.68	1,588.38	1,578.17	4.73	(3.22)	0.17	(0.64)

The performance of the fisheries sector in 2019 was achieved through the concerted efforts of the Bureau of Fisheries and Aquatic Resources (BFAR), its Regional Offices, in coordination with fishery-related organizations and local government units (LGUs), and the private sector.

With the predicaments that confront the fisheries sector, the Bureau continues to provide appropriate interventions and initiatives with its core programs and projects such as the Fisheries Regulatory and Law Enforcement Program, Aquaculture Production Program, Capture Fisheries Livelihood Development Program, Fisheries Extension Program, Coastal and Inland Fisheries Resource Management, among others. Aligned with its mission towards improving fisheries productivity within ecological limits and empowering stakeholders towards food security, inclusive growth global competitiveness and climate change adaptation.

# HIGHLIGHTS



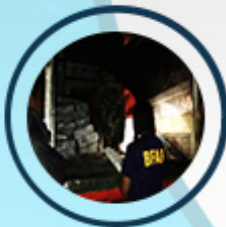
## I. FISHERIES DEVELOPMENT PROGRAM



## II. FISHERIES REGULATORY & LAW ENFORCEMENT



## III. FISHERIES EXTENSION PROGRAM



## IV. FISHERIES POLICY PROGRAM

# **I. FISHERIES DEVELOPMENT PROGRAM**



- a. Aquaculture Sub-program**
- b. Capture Fisheries Sub-program**
- c. Post-harvest Sub-program**
- d. Market Development Sub-program**



### **a. Aquaculture Sub-program**

The Bureau provides services focusing on the development of freshwater, brackishwater as well as marine water aquaculture. The said services intend to help increase and enhance productivity and production of quality broodstock and fingerlings to be distributed to the fisherfolk beneficiaries, LGUs, fisherfolk organizations and private individuals interested in venturing into fish production.

#### **Maintenance and Distribution of Broodstock**

The bulk of fisheries production in the Philippines is derived from the aquaculture sector. Continuous production of fingerlings is one of the priority interventions of the Bureau where one of the vital activities in ensuring this is through broodstock development. For FY2019, the Bureau maintained a total of 488,507 breeders composed of 440,168 quality tilapia, 11,172 carp, 4,435 milkfish, and 32,732 other species. The Bureau also distributed a total of 5,721,271 breeders or fingerlings for broodstock development consisted of 5,374,610 tilapia, 187,500 carps, and 159,161 breeders of other species of fish in response to the pressing need for steady supply of good quality fry and fingerlings to meet the production demands of fish farmers as well as increase fish production and for restoration of lakes and rivers.

#### **Fish Seed Production and Distribution**

For the period covered, the Bureau was able to produce a total of 286 million of fingerlings and distributed 239 million to 27,473 individuals and 1,046 group beneficiaries.



**Figure 5. Fingerlings distribution of BFAR Region V to the beneficiaries.**



## **Develop Key Aquaculture Commodities to Increase Production: Five Potential Fishery Commodities**

### **A. Shrimp (HIPON Program)**

The HIPON or “Hipon langat ang Produksyon” Program envisioned for a sustainable and equitable shrimp industry recognized internationally for its high-quality shrimp produced using socially responsible and environmentally sound production system. One of the main goals of the program is to increase the number of shrimp hatcheries, expand production area by increasing the number of BFAR registered and accredited grow-out farms that eventually will result to increasing shrimp production.

Activities include registration and accreditation of hatcheries and grow-out farms, provision of technical assistance, conduct of disease surveillance, monitoring and reporting, and IEC dissemination, among others.

### **B. Tilapia**

Component 1: Tilapia Genetic Enhancement and Broodstock Distribution that aims to improve existing tilapia strains in terms of survival, climate resiliency and disease resistance and to produce/distribute improved tilapia strains.

Component 2: Product Quality Assurance in Tilapia Hatchery Industry that conducts profiling through fin clipping of tilapia broodstock at the Breeding Nucleus. One of the activities under this component is genotyping or process in determining the differences in the genetic make-up of tilapia.

Component 3: BFAR-Private Partnership Component Technology which includes activities such as packaging and promotion of intensive tilapia hatchery and nursery technologies, technology demonstrations of nursery advance tilapia fingerling production, among others.

Component 4: Production Expansion in Brackishwater and Small Water Impoundments (SWIPs) where there were initiatives to produce iBEST, Molobicus and Red tilapia broodstock to be distributed to the Bureau's National Technology Centers and stock at SWIPs nationwide.

## C. Seaweed

The Seaweed Development Program (SDP) was conceptualized to harmonize and strengthen the Bureau's projects and activities to enhance and manage the seaweed resource in attaining a sustainable Philippine Seaweed Industry.

One of the objectives of the SDP and the establishment of Regional Seaweed Tissue Culture Laboratories is to provide quality seaweed propagules to the seaweed farmers. From January to December 2019, the Bureau was able to distribute 844,759 kgs of seaweed propagules to 4,182 individual beneficiaries and 60 groups and 1,748 sets of seaweed farm implements to 2,199 individuals and 58 group beneficiaries. BFAR also maintains eleven seaweed tissue culture laboratories nationwide to help protect the seaweed industry located at Lucap, Alaminos, Pangasinan (Region I); Tuguegarao City (Region II); Baler, Aurora (Region III); Tiwi, Albay (Region V); Guimaras (Region VI); Ubay, Bohol (Region VII); Guiuan, Samar (Region VIII); Zamboanga City (Region IX); Masao, Butuan, Agusan del Norte (Region XIII); and ORG Compound, Cotabato City (ARMM); and Sorsogon (NSTDC).



**Figure 6. Harvesting of cultured seaweeds of beneficiaries.**

Another activity of SDP is Cooperative Organizing where Regional Seaweed Coordinators were trained as Cooperative Organizers/Trainers composed of 4 courses: Cooperative Organizing Training Workshop; Fundamentals of Cooperatives; Training of Cooperative Trainers; and Cooperative Governance and Management. SDP has organized and strengthened viable seaweed marketing cooperatives that are operational in different seaweed producing municipalities in the country.

Seaweed farmers were transformed into Entrepreneurial Cooperatives where they earn more profit by managing their seaweed nurseries as business enterprises.

The National Seaweed Technology Development Center (NSTDC) continues to maintain the seaweed nursery as well as seaweed techno-demo farm including intervention to maintain seaweed culture laboratory including distribution of seaweed propagules.

## **D. Bangus**

Milkfish (*Chanos chanos*) also known as “Bangus” is the prime fish commodity in the Philippines. It is the second leading aquaculture species next to seaweed with 303,402 metric tons or 13.7% of the country's total aquaculture production (2018 data). To date, the country has total of around 239,323 has. of milkfish ponds, 20,000 has. fishpen, and 7,248 units fish cages operated for bangus culture. According to industry estimates, the country has an annual estimated fry requirement of 3.7 billion to produce 923 million fingerlings in order to sustain the milkfish industry. Despite its great potential, bangus industry is currently confronted with the problem on fry shortage. Decline in natural fry supply due to overexploitation and coastal pollution (Ahmed *et al.*, 2001) and lack of hatchery-bred fry are the main causes of milkfish fry deficit. Based from 2019 annual bangus fry production data, 860.75 million fry were produced by 43 registered hatcheries and 19.5 million from wild. At present the country is deficit of about 2.810.12 billion which is 76% of the total requirement.

### **Proposed Strategies to Address Bangus Fry Deficit:**

1. Milkfish Broodstock Development
2. Establishment of Community-Based Larval Rearing Facility (CBLRF)
3. Re-Identification of Fry Banks and Provision of Fry Holding Facilities and Fry Collecting Gears
4. Conduct of Milkfish Larval Rearing Training for Project Recipients



## D. Shellfish

The Bureau continues to embark on raft maintenance for seeding of shellfish since it aims at producing quality and safe oyster and mussel. It also intends to distribute seed collectors for potential areas with insufficient supply of seeds. Trainings are also conducted in priority areas to capacitate and improve the competency of shellfish farmers on culture and value adding technologies.

Technical assistance and dissemination of information, education and communication (IEC) campaign materials are also being carried out to ensure the development and sustainability of the shellfish industry.

Under the Shellfish Program, BFAR is mandated to prevent Harmful Algal Blooms (HABs) that aims to protect the ecosystem and most importantly the public health. This is another regulatory function of the Bureau where for 2018, the Bureau conducted 2,839 HAB monitoring and operated eight HAB laboratories nationwide.



**Figure 7. Monitoring and sampling of oyster and mussel growths, New Washington, Aklan.**

### Operation and Maintenance of Mariculture Parks

BFAR in partnership with the stakeholders and LGUs promoted the establishment of Mariculture Parks to address major issues such as food security, employment, livelihood and poverty reduction in coastal areas. A total of 30 Mariculture Parks were maintained by the Bureau located strategically in the country; four in Region I (Sto. Tomas & Rosario, La Union, Narvacan, Ilocos Sur, and Sual, Pangasinan), one in Region II (Sta. Ana, Cagayan), one in Region 3 (Casiguran, Aurora), two in Region IVA (Padre Burgos & Perez, Quezon), one in Region V (Matnog, Sorsogon), four in Region 7 (Candijay, Talibon, Calape Bohol, and Bais, Negros Oriental), eight in Region 8 (Tacloban City, Merida & Babatngon, Leyte, Sta. Rita & Basey, Samar, San Jose & Laoang, Northern Samar, and Biliran, Biliran), two in Region 10 (Balingasag, Misamis Oriental & Lopez Jaena, Misamis Occidental), five in Region 11 (Panabo City & Igacos, Davao del Norte, Pantukan, Compostella Valley, Mati, Davao Oriental, and Malita, Davao Occidental), and two in Region 13 (Nabagao, Surigao City and Barobo, Surigao del Sur).



**Figure 8. Mariculture Park in Perez, Quezon.**



## **b. Capture Fisheries Sub-program**

### **Distribution of Fishing Gears and Paraphernalia**

Aside from technical assistance on fishing technology, the national government in coordination with the LGUs distributes passive and environment-friendly fishing gears and paraphernalia.

During the period, a total of 31,542 fishing gears were distributed to 20,716 individual beneficiaries and 181 groups. The various fishing gears distributed are composed of the following: 6,310 gillnets; 8,227 hook and lines; 1 lambaklad; 572 fishpots; 162 payaos; 3,288 squid jiggers; 250 marine engines; 850 fish traps; 1,674 multiple handlines; 2,197 tuna handlines; 2,000 crab lift nets; 3,553 crab pots; 300 spear fishing gadgets; 1,068 life vests; and 1,090 other types of fishing gears.

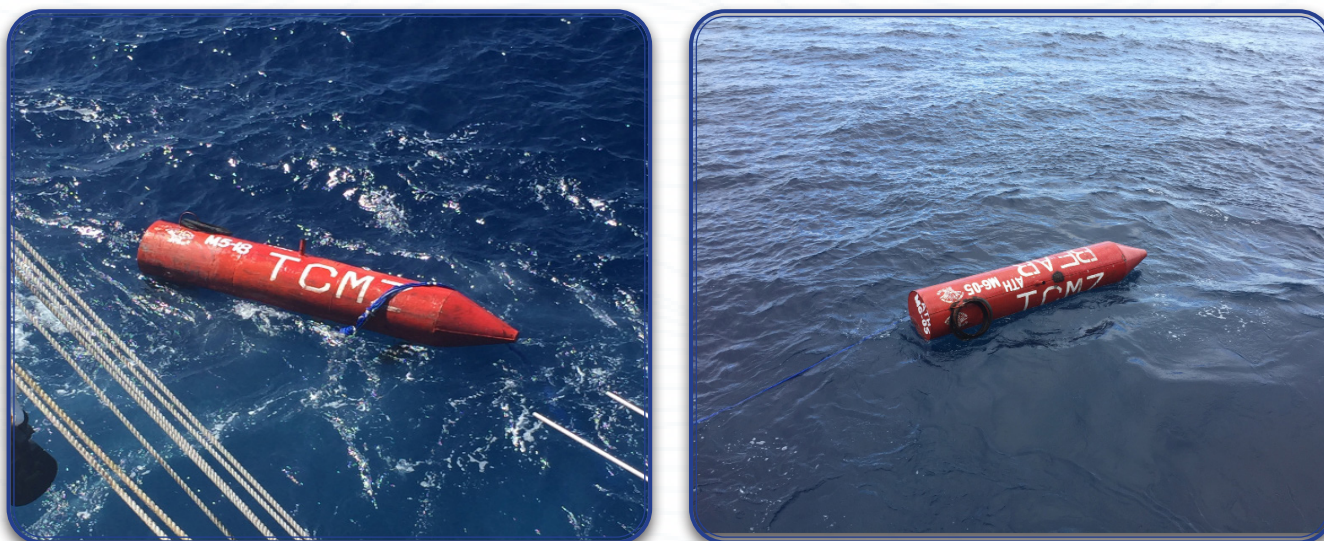


**Figure 9. Distribution of bottom set gillnet (left) and hook and lines (right).**

### **Fish Aggregating Device (FAD) / Payao**

Fish Aggregating Device (FAD) or locally known as Payao is considered as one of the most effective fishing technologies that significantly contributes marine fish production in the Philippines. Since 1970s, the use of Payao was recognized as the root that triggered rapid tuna fishery development in the country. This technology does not only enhance fish aggregation and fishing efficiency but more importantly it reduces the cost of fishing operation. Ever since, the technology is employed in many variations and became prevalent in fisheries worldwide particularly in tuna purse seine. In the Philippines, many fishing gears like purse seine, ringnet and handline for tuna as well as other pelagic fishes are totally dependent on FADs for their fishing operations.

For FY2019, a total of 162 payaos were distributed to 203 individuals and 63 group beneficiaries nationwide.



**Figure 10. Fish Aggregating Device (FAD) or payao deployed in Maguindanao Sea.**

### **DA-BFAR F/B Pagbabago Livelihood Program**

The Fiberglass Reinforced Plastic (FRP) boats which are disaster-resilient, more durable and environment-friendly are designed to ensure resiliency and safety of fishermen at sea. The Bureau also institutionalized training on capacity building and construction of FRP boats as livelihood interventions to uplift the economic status of fisherfolk by empowering them and their families to become responsible resource users. For the period, a total of 6,321 FRP boats were distributed to 7,264 individuals and 14 beneficiaries.

Aside from those activities, F/B Pagbabago Livelihood Program also rendered technical assistance to BFAR Regional Offices, LGUs, NGOs and other stakeholders. Four batches of trainer's training for the construction, repair and maintenance of FRP boats were also conducted.



**Figure 11. Distribution of FRP boats to the beneficiaries in Region V (L) & MIMAROPA (R).**





**Figure 12. Trainer's Training on the Construction, Repair, and Maintenance of FRP Boat held at BFAR NMFDC, Navotas City with a total of thirty (30) participants – Fisherfolk, Private sectors and BFAR Technical staff.**

### **c. Post-harvest Sub-program**

#### **Distribution of Other Post-harvest Equipment**

For FY2019, a total of 2,210 post-harvest equipment was distributed to 715 fisherfolk individuals and 210 groups/associations comprised of 18 fishmarts, 5 fish stalls, 5 ice making machines, 37 smokehouses, 30 elevated solar dryers, 70 seaweed dryers, 2 freezers, 5 vacuum packers, 340 processing utensils and 1, 698 other post-harvest equipment.

#### **Maintenance & Operation of Other Fishery-Related Infrastructure and Equipment**

The Bureau also maintained and operated ten reefer vans and five processing plants nationwide: one each at NIFTDC, Binloc, Dagupan City; Santo Tomas, La Union; Hagonoy, Bulacan; Mercedes, Camarines Norte and Bula, Camarines Sur.



**Figure 13. Distribution fish vending tri-bike to beneficiaries of BFAR CALABARZON.**





**Figure 14. Other post-harvest equipment distributed by BFAR.**

### **Community Fish Landing Center (CFLC) Project**

The Community Fish Landing Center (CFLC) Project which is a component of BFAR's Targeted Actions to Reduce Poverty and Generate Economic Transformation (TARGET) Program was developed in collaboration with the National Anti-Poverty Commission (NAPC), the Municipal Local Government Unit and the fisherfolk beneficiaries. One of the main objectives of the CFLC is to reduce post-harvest losses and improve the socio-economic conditions of the poor fishing communities by providing coastal communities with a facility that is equipped with fish stalls and chest freezers, among others.

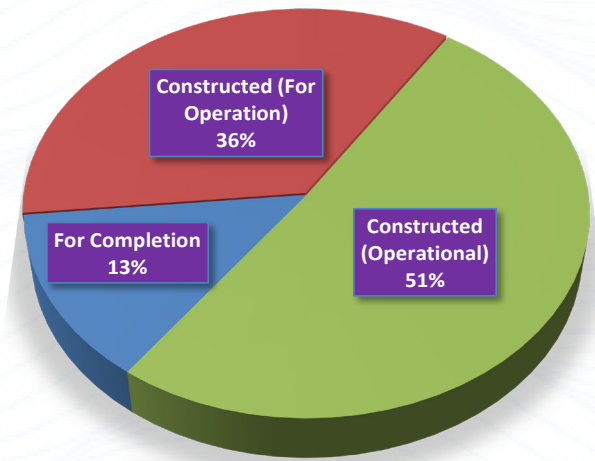
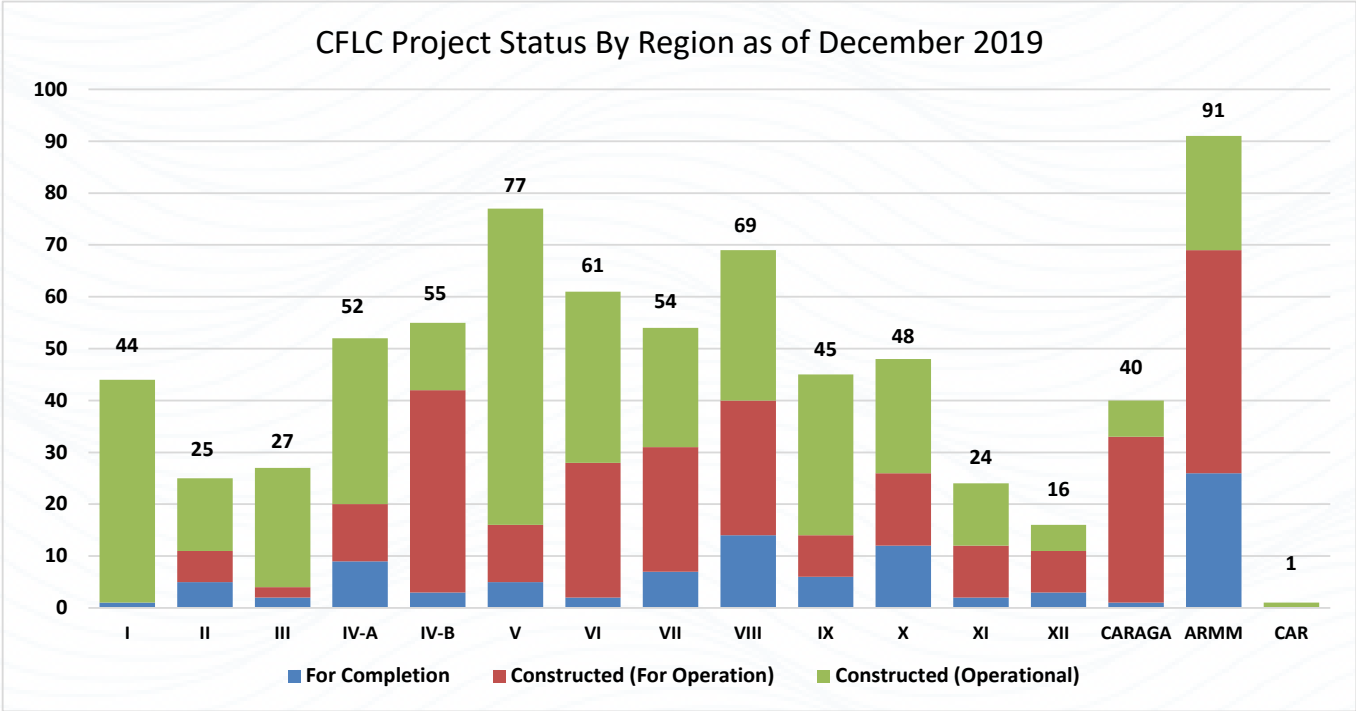
From FY 2015 to 2018, a total of 729 units of CFLC were approved for implementation funded under the General Appropriations Act (GAA). Table 5 shows the CFLC Project's Summary of Accomplishments, wherein, 631 units of CFLCs are already constructed of where 371 units (51%) are operational, and 260 units (36%) are for operationalization; whereas, there are 98 units (13%) which are still for completion.

**Table 8. Summary of Accomplishments of CFLC FY 2015-2018**

STATUS	UNITS	PERCENTAGE
Construction Completed		
Operational	371	51%
Not Yet Operational	260	36%
For Completion	98	13%
<b>TOTAL</b>	<b>729</b>	<b>100%</b>

Among the 371 operational CFLC units which refer to facilities that are functioning as venue for fish landing and trading, trainings and meetings; venue for repair of boats and mending fishing nets; and as shelter for boats especially during typhoon. Bicol Region, Ilocos Region, and Western Visayas are leading with most operational CFLCs.

Figure 15. CFLC Status per Region per Milestone



Region	Total No. of CFLCs (FY 2015-2018)	Number of CFLCs under each Milestone		
		For Completion	Construction Completed	
			For Operation	Operational
I	44	1	0	<b>43</b>
II	25	5	6	<b>14</b>
III	27	2	2	<b>23</b>
IV-A	52	9	11	<b>32</b>
IV-B	55	3	39	<b>13</b>
V	77	5	11	<b>61</b>
VI	61	2	26	<b>33</b>
VII	54	7	24	<b>23</b>
VIII	69	14	26	<b>29</b>
IX	45	6	8	<b>31</b>
X	48	12	14	<b>22</b>
X1	24	2	10	<b>12</b>
X11	16	3	8	<b>5</b>
CARAGA	40	1	32	<b>7</b>
ARMM	91	26	43	<b>22</b>
CAR	1	0	0	<b>1</b>
<b>TOTAL</b>	<b>729</b>	<b>98</b>	<b>260</b>	<b>371</b>
Percentage		13%	36%	51%

From January to December 2019, additional 161 units of CFLCs were operationalized and 102 units were established regardless of the funding year as shown in Table 7.

**Table 9. CFLC Project 2019 Jan-Sept Accomplishment by Region**

Region	January - December 2019 Accomplishment	
	Completed/ Establishment	Operationalized
I	0	13
II	2	9
III	0	11
IV-A	6	24
IV-B	11	10
V	15	18
VI	9	
VII	5	8
VIII	1	5
IX	3	13
X	10	20
XI	8	6
XII	5	
CARAGA	3	5
ARMM	24	20
<b>TOTAL</b>	<b>102</b>	<b>161</b>



Some of the challenges in making the CFLCs operational are the following:

- 🐟 Existing fisherfolk organization and Project Management Committee (PMC) need to be strengthened through the Social Preparation which is facilitated and conducted by the National Anti-Poverty Commission of the Philippines (NAPC);
- 🐟 Approval of the Municipal Ordinance on the operations of the CFLC which includes the fees and charges to be imposed;
- 🐟 Formulation and approval of CFLC Operation and Management Plan by the LGU and Fisherfolk;
- 🐟 Lack of starting capital by the fisherfolk-beneficiaries and;
- 🐟 Limited support services provided by the LGUs (e.g. some CFLC sites have no electricity and water connection)

Moreover, the major challenges that affected the project implementation are the following:

- 🐟 Tedious processing of documentary requirements such as land tenurial instrument and application of certifications/permits from relevant agencies.
- 🐟 Difficulty in identifying/looking for lands where the CFLCs would be constructed which are owned by the LGUs and the changing of project sites.
- 🐟 Some locations identified for construction need land development prior to the establishment of the CFLCs.

Because of the varying resources and circumstances of each community, the CFLC Operation and Management (O&M) Plan was formulated and designed specifically for each site by the LGU-beneficiary in consultation with the fisherfolk. BFAR and NAPC facilitated the formulation of said plan to ensure the operation of the facility.



**Figure 16. Operational CFLC in Mabini, Batangas and Sariaya, Quezon.**



#### **d. Market Development Sub-program**

The Bureau's Market Development Service aims to provide linkages between prospective markets and producers through various activities such as product promotion and market matching. Through this, BFAR will be able to contribute to the competitiveness and enhancement of the value of the fisheries products.

#### **Marketing Assistance and Participation to Agri-Aqua Fairs and Exhibits**

For FY2019, BFAR participated in 179 agri-aqua fairs and exhibit. Under this, a total of 15 investment/industry fora and 102 market matching activities were conducted.

Aside from this, the Bureau through the Fisheries Industry Development Support Services Division, was able to develop the Price Monitoring Program (PMP) to observe, record and analyze prevailing prices and other relevant market information of major fishery commodities at all levels in the value chain, including the wholesale trading in the fish port. The price monitoring program is also being undertaken to gather information that could be used as tool for planning and policy formulation relevant to food security program where a total of 5,742 market monitoring was conducted.

#### **TienDA**

The Bureau also conducted and assisted in the TienDA Farmers and Fisherfolk's Outlet which was spearheaded by the Department of Agriculture. TienDA was conceptualized with the aim of providing an outlet to agri-fishery products consisted of crabs, fresh chilled-bangus and tilapia, smoked fish (e.g. galunggong, tamban, etc.) and bottled products which were sold at affordable and reasonable prices. The activity enabled our fishery-based MSMEs to showcase and promote their produce.



**Figure 17. Conduct of price monitoring.**



Figure 18. Agri-Aqua fair participated.

## **e. Locally Funded Projects**

### **Special Area for Agricultural Development (SAAD)**

The Department of Agriculture (DA) is formulating detailed plans and investment proposal for the implementation of Special Area for Agricultural Development (SAAD) that will cover 60 priority provinces in the country for the period CY 2017 to CY 2022. Ten provinces are already identified in 2017 and another ten in 2018. The project is designed to come up with appropriate livelihood interventions toward improving the incomes of farmers and fisherfolk in the priority provinces in the Philippines through the implementation of sustainable rural development strategies.

#### **Component I. Community Needs Assessment**

The BFAR-SAAD conducted Community Needs Assessment to identify the appropriate interventions and address the needs of the communities. Through the assessment, the residents and officials of the barangays were educated on the proposed development on the community's social and economic well-being. From January to December 2019, BFAR-SAAD accomplished 149 Social Preparation which benefitted 3,245 individuals and 305 groups.

#### **Component II. Provision of Livelihood Interventions**

In 2019, BFAR-SAAD implemented 46 projects in aquaculture comprised of cages for livelihood, village level hatchery, seaweed farm implements, seaweed propagules distributed and technology demonstration for upland aquaculture, pond aquaculture, pen aquaculture, organic farming, aquasilvi and shellfish culture that benefitted a total of 3,400 individuals and 277 groups.

Aside from technical assistance on fishing technology, the BFAR-SAAD in coordination with the LGUs distributed environment-friendly fishing gears and paraphernalia with the implementation of 42 projects in 2019. The various fishing gears distributed to 3,091 individual beneficiaries and 191 groups were composed of gillnets, hook and lines, fishpots, payao, squid jiggers, motorized bancas, non-motorized bancas, marine engines, multiple handlines, tuna handlines, crab pots, spear fishing, life vest and others (styrofoam box, raincoat, salakut, goggles, raincoat, gasoline, lantern light, etc.).

During the period, a total of 13 post-harvest projects were implemented and distributed to 15 fisherfolk individuals and 59 groups/associations comprised of fish stalls, smokehouses, seaweed dryers, freezer, processing utensils, and others (i.e. noodle machine, plastic sealer, smoke burner and drying racks).



## Component II. Provision of Livelihood Interventions

Training is one way to capacitate the fisherfolk on the technical knowhow about aquaculture, capture, post-harvest and other related training on financial management. A total of 101 training courses on aquaculture, municipal, commercial and post-harvest technologies were conducted with 4,157 participants from January to December 2019.



**Figure 19. Distribution of livelihood to the SAAD beneficiaries.**

## **Foreign Assisted Project**

### **Fisheries, Coastal Resources and Livelihood Project (FishCORAL)**

The overall project implementation of the Fisheries, Coastal Resources and Livelihood (FishCORAL) Project has reached 64.52% as of December 31, 2019 in 103 municipalities and 14 provinces covering 11 bays/gulfs. These include: (1) formation of Bay Management Council (BMC); (2) assistance in the delineation of municipal waters; (3) support in the registration to FishR and BoatR systems; (4) Coastal Resources Management (CRM) Plans formulation, updating, and integration to Municipal Development Plan (MDP); (5) mangrove rehabilitation; (6) construction of Bay-Management and Multipurpose Building (BMMB), watchtower, solar dryers, jetty ports, and hatchery; (7) fabrication of patrol boats and delivery of patrol boat equipment; (8) installation and deployment of fish sanctuary markers, artificial reefs and coral nursery unit; (9) Participatory Resource and Socio-economic Assessment (PRSA); (10) stock enhancement activities; (11) provisions of motorcycles (12) delivery of materials and establishment of livelihood projects; (13) procurement and delivery of freezers and mobile ice makers; (14) and conduct of CRM and livelihood trainings, workshops and seminars.



## II. FISHERIES REGULATORY & LAW ENFORCEMENT



- Monitoring, Control and Surveillance
- Quality Control and Inspection
- Quarantine, Registration and Licensing
- Coastal and Inland Fisheries Resource Management

## Monitoring, Control and Surveillance

### **Regulations and Enforcement Activities**

Under the Bureau's regulatory functions on monitoring, control and surveillance, 111 MCS and patrol vessels were deployed in their respective areas with a total of 4,257 field operations conducted during the period.



Seaborne Operation



Boarding Inspection



Mobile Checkpoint



Landing Denial

### **Market Denial**

And for the period, a total of 600 apprehensions were recorded and 710 cases were received and out of those, 640 cases were resolved. A total of PhP 97.104M of fines and penalties were collected from the Wildlife Management Fund and Fisheries Management Fund.



**Figure 20. Regulations and Enforcement Activities**

### **Harmful Algal Bloom (HAB) Monitoring**

Another regulatory function of BFAR is the prevention of Harmful Algal Blooms (HABs) that aims to protect the ecosystem and most importantly the public health. For the period, the Bureau conducted 5,127 HAB monitoring nationwide.

Regular Shellfish Bulletins were issued bi-monthly (or whenever necessary in conjunction with Shellfish Advisories) for management purposes and for dissemination to the public on the shellfish status in the Philippines. These bulletins were also posted on BFAR websites: [www.bfar.da.gov.ph](http://www.bfar.da.gov.ph) and [www.bfar-frmdhabmonitoring.com.ph](http://www.bfar-frmdhabmonitoring.com.ph).

### **Quality Control and Inspection**

#### **Monitoring and Inspection of Fishery Facilities**

Monitoring and inspection of fishery facilities and the production chain is one of the regulatory functions of BFAR to ensure the protection of consumer welfare, product safety and public health. From January to December 2019, the Bureau conducted 4,086 monitoring and inspection of aquaculture farms and fishery facilities that resulted to 45,192 analyses.



**Figure 21. Farm Inspection at Crab and Prawn Hatchery at Banacud, Milagros Masbate**



## **Monitoring and Inspection of Fishery Products**

Consistent with RA 10611, also known as the "Food Safety Act of 2013", the Bureau established and maintained quality assurance laboratories mandated to provide laboratory services on the verification of physical, chemical and microbiological examinations of fish and fishery product for export, import and local consumption. During the period, a total of 4,963 monitoring and inspection of fish and fishery products were conducted that resulted to 41,152 analyses nationwide.

## **Quarantine Registration and Licensing**

### **Permit Issuance**

Under this component, the Bureau regularly issues permit, licenses and accreditations to fisheries entities. For this year, a total of 22,726 permits and licenses were issued to commercial fishing vessels, 1,499 to FLA covered areas, while 69,731 were issued to other fisheries entities.

In line with this, BFAR conducted a total of 373,710 inspections on commercial fishing vessels and gears, FLA covered areas, other fisheries entities and fisheries products.



**Figure 22. Conduct of fisheries inspection and issuance of local transport permit (LTP).**



### **Coastal and Inland Fisheries Resource Management**

The Bureau assisted 484 LGUs and conducted a total of 399 monitoring of marine sanctuaries. From January to December, the Bureau was able to deploy a total of 466 artificial reef modules. For the same period, 2,270,000 pieces of mangrove propagules were planted nationwide under the Aquasilviculture Program.



**Figure 23. Rapid Resource Assessment of Fish Sanctuary in Infanta, Quezon.**



**Figure 24. Mangrove planting in Panukulan, Quezon**

### Malinis at Masaganang Karagatan (MMK)

The Malinis at Masaganang Karagatan (MMK) which is the Bureau's incentive program conceptualized to promote fisheries resource protection and conservation to fisherfolk and other stakeholders in coastal municipalities. Launched in August 2016, MMK has been active in searching for the country's most outstanding coastal communities a total of 139 million of livelihood projects was awarded to the coastal towns that best exhibit good Coastal Resource Management (CRM) practices.

**Table 10. Number of Nominated LGUs from 2016-2019**

Region	Number of Coastal LGUs	Number of Nominated LGUs			
		2016	2017	2017	2019
I	53	5	5	4	2
II	26		4	3	3
III	36	8	5	10	8
IV-A	69	4	5	5	4
IV-B	72	4	7	4	1
V	89	1	5		4
VI	83	5	4	12	4
VII	109		4	4	3
VIII	121	2	4	5	1
IX	47	5	6	7	4
X	55	8	8	4	4
XI	30	4	1	6	1
XII	10	1	3	3	3
XIII	51	5	3	3	3
ARMM	65	1	3	4	4
Total	917 (w/o NCR)	53	67	75	48

The Department of Agriculture through the Bureau of Fisheries and Aquatic Resources is implementing the “Ani at Kita Kamtan sa Malinis at Masaganang Karagatan (MMK) Program” or simply “Ani at Kita sa MMK”. It is a national search for outstanding coastal municipalities. It provides substantial incentives for exemplary accomplishments relative to fisheries management in the municipal waters that ultimately result to improved and sustainable fisheries production.

The Program is also a means to document best practices and strategies to promote replication and/or adoption among 929 coastal municipalities.



**Figure 25. Macrohon, Southern Leyte (Left) Alaminos, Pangasinan (Right).**

### ***Balik Sigla sa Ilog at Lawa (BASIL) Project***

The Balik Sigla sa Ilog at Lawa (BASIL) Project which was launched in June 2017 designed to rejuvenate the country's major inland bodies of water to optimize their economic benefits, enhance fisheries towards sustainability, and repopulate indigenous species in support to biodiversity conservation and food sufficiency.

From January to December 2019, 60 management sites were completely rehabilitated, 34 management sites provided with capacity building and ongoing rehabilitation, and 32 management areas were validated with ongoing capacity building.

## Closed Fishing Season

RA 8550 as amended by RA 10654, otherwise known as the Philippine Fisheries Code adapted one of its major strategies to safeguard the fisheries sector through the implementation of closed fishing season in selected waters in the country in order to replenish its aquatic resources.

**Table 11. List of Areas with Corresponding Period of Closed Season**

Fisheries Management Area	Period
<b>Sardines and Small Pelagics</b>	
Davao Gulf	01 Jun - 31 Aug
Palawan Waters	01 Nov - 31 Jan
Visayan Sea	15 Nov - 15 Feb
BaSuITa & Zamboanga Sibuguey	01 Dec - 01 Mar
Cagayan Valley - Ludong	01 Oct - 15 Nov



## **Locally Funded Projects**

### **Integrated Marine Environment Monitoring System (IMEMS)**

The Integrated Marine Environment Monitoring System (IMEMS) aims to significantly improve and extend the existing capabilities of the BFAR Vessel Monitoring System (VMS) and operationalize a Single Integrated National Marine Environment Monitoring System that is financially viable and scalable over the long term. The Project has the following components:

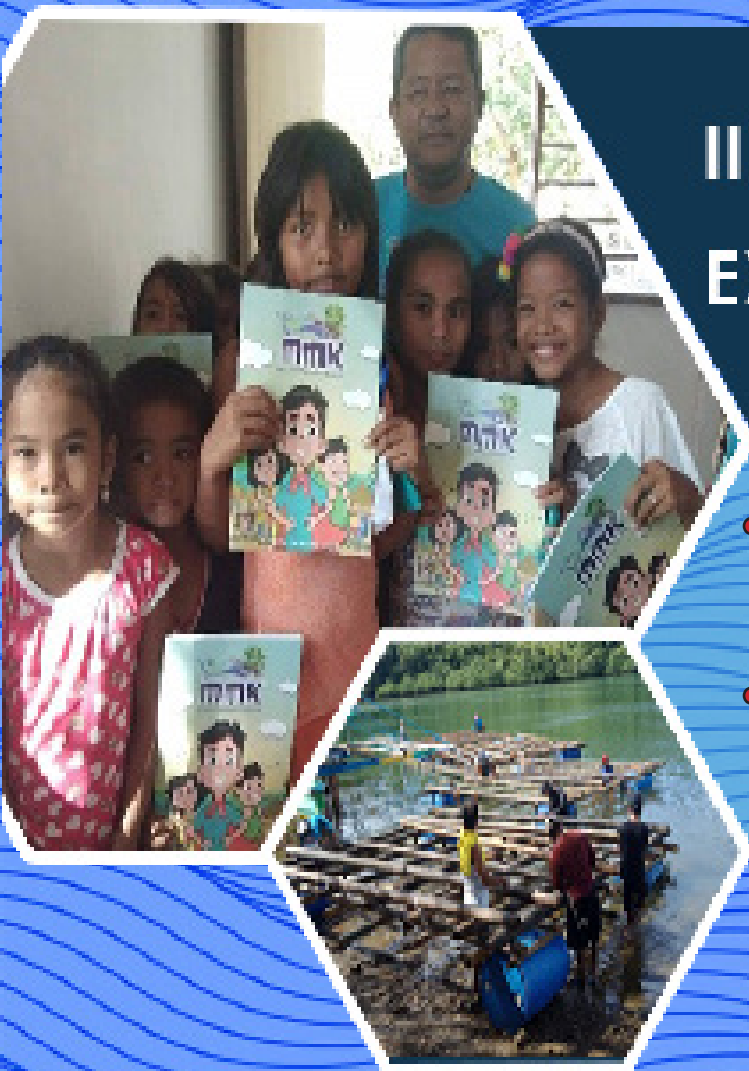
#### **- Port and Coastal Monitoring System (PCMS)**

Under the Port and Coastal Monitoring System (PCMS) Type 1, 15 sensor stations will establish that enable real time tracking and identification of vessels near ports and coastal areas. The PFDA provided BFAR with 93 fishports that were turned-over to the LGUs for possible installation of the PCMS Type 2 coast station device. These fishports were assessed by SRT Marine Systems and only 11 were found feasible. Out of the eleven feasible sites, the PMO were able to present the IMEMS and MOA to five fishports: Orani, Bataan; Malolos, Bulacan; Danao, Cebu; Mercedes, Camarines Norte; and Panabo, Davao Oriental. The MOA is currently under legal review by the Local Government Unit (LGU) and for follow-up by the PMO.

#### **- Transceiver**

In compliance with the European Union (EU) Audit held on December 2018, the Bureau temporarily installed 50 transceiver units which is comprised of SRT's A100 and CLS' Triton Advance from March- July 2019. There are 7,000 fishing vessels registered in the Fishing Vessels Electronic Licensing System (FELIS) database, however, the priority fishing vessels for installation are those operating in Philippine-flagged fishing vessels operating in international waters, catcher vessels with 30 gross tonnage and above, and those exporting tuna to the EU.

### III. FISHERIES EXTENSION PROGRAM



- Education Support, Education and Training
- National Fisheries Extension Program (NFEP)

### **Education Support, Education and Training**

Extension support, education and training service is one of the major services provided by BFAR. The Bureau covers various fishery technologies on aquaculture, capture fisheries and post-harvest that aims to educate fisherfolk and develop manpower for the fisheries industry as well as strengthen partnerships with the LGUs and stakeholders of the fisheries industry.

### **National Fisheries Extension Program (NFEP)**

Pursuant to Section No. 154 of the RA 10654 (Amended Fisheries Code of 1998), the DA-BFAR is mandated to develop a National Fisheries Extension Program or NFEP. NFEP is one of the key planning and strategy document specified in RA 10654, with the goal of developing cost-effective, practical and efficient technology transfer, advisory services, technical assistance, among others. It is very crucial for the Bureau to identify the relevant and appropriate extension services that the stakeholders will truly benefit towards the attainment of food security, global competitiveness, inclusive growth and climate change adaptation. Moreover, it is also necessary to update the delivery of extension services and establish more collaboration alongside other concerned agencies in order to come up with a comprehensive and coherent program to cater the current and specific needs of the fisheries industry.

The milestones in the crafting NFEP are as follows:

1. Entered into a Memorandum of Understanding with DA-ATI in November 2018 to assist and guide BFAR in the formulation of NFEP.
2. Conducted Pre-planning Workshop on March 12-14, 2019 in Baguio City which was attended by the Chiefs of the Production Support and Training Divisions from Regions CAR, ARMM, 1 to 13.
3. Conducted Stakeholders Consultation and Strategic Planning for Luzon Cluster on April 10-12, 2019 in Quezon City which was participated by different BFAR Stakeholders (NGAs, SUCs, LGUs, FARMCs, People Organizations & etc) and Chiefs of Production Support and Training Divisions from Regions CAR, 1, 2, 3, and 4A.
4. Conducted Stakeholder Consultation and Strategic Planning for Visayas Cluster on June 18-20, 2019 in Cebu City with participants from different BFAR Stakeholders (NGAs, SUCs, LGUs, FARMCs, People Organizations & etc) and Chiefs of Production Support and Training Divisions from Regions 4B, 5, 6, 7, & 8.



### ***Provision of Training and Technical Assistance***

In 2019, around 1,193 training courses on aquaculture, municipal, commercial, regulatory and post-harvest technologies were conducted that benefitted a total of 31,876 individuals and 341 groups of participants. Aside from trainings, BFAR also provided 76,731 technical assistance to 87,801 individuals and 18,761 groups of fish farmers, NGAs, LGUs and other stakeholders.



**Figure 26. Post-harvest and fish processing training.**

### ***Establishment of Techno-Demo Projects***

One of the major activities of the Bureau is the technology demonstrations which are designed to showcase different fishery technologies on seaweed farming, integrated farming, aquasilvi/ mangrove culture and shellfish culture, among others. BFAR established 605 techno-demo projects that benefitted a total of 747 groups/associations and 1,909 individual fisherfolk and other stakeholders in 2019.



**Figure 27. Shellfish project in Panukulan, Quezon.**



### **Conduct of Information, Education and Communication (IEC) Activities**

Dissemination of information, education and communication (IEC) materials is considered vital in the promotion of the Bureau's programs and projects. With that in mind, the Bureau was able to distribute 249,593, developed/produced 7,078 IEC materials and conducted 704 other IEC activities nationwide.



**Figure 28. IEC materials distribution.**

### **Strengthening Partnership with Stakeholders**

The Bureau is mandated by law to provide assistance to LGUs including the Fisheries and Aquatic Resources Management Council (FARMC). A total of 457 Municipal/City FARMCs were strengthened and 1,672 LGU technicians have been assisted nationwide in 2019.



**Figure 29. M/CFARMC strengthening.**

### **Fisheries Scholarship Program**

The Bureau through the Fisheries Scholarship Program (FSP) grants full college scholarship to deserving high school graduates. The FSP has two components: Fisherfolk Children Educational Grant (FCEG) intended for poor but deserving children of fisherfolk and the Fisheries Industry Leader Grant (FILG) which is a merit-based scholarship where both components require the scholars to pursue a four-year BS Fisheries course. A total of 981 FCEG and 130 IL scholars in SY2018-SY2019 and for SY2019-2020, a total of 1,020 FCEG and 140 IL scholars are being supported by the Bureau.

## IV. FISHERIES POLICY PROGRAM

- **Formulation, Recommendation, Monitoring and Evaluation of Policies, Plans and Programs**
- **International Meetings/Consultations/ Workshops Conducted/Attended/ Hosted**



## ***Formulation, Recommendation, Monitoring and Evaluation of Policies, Plans and Programs***

Policies are essential tools used by BFAR Management in the decision making on the utilization, management, development and conservation of the country's fisheries and aquatic resources. For the period, BFAR was able to draft eleven policies and submitted nine policies for approval. The Bureau also conducted 14 policy reviews/studies and 23 stakeholders consultations.

## ***International Meetings/Consultations/Workshops Conducted/Attended/Hosted***

In connection with the Bureau's commitment to promote the Regional and International Co-operation in Fisheries, BFAR attended and participated in the following significant meetings/conferences:



**BIMP-EAGA Strategic Planning Meeting  
(Sabah, Malaysia – February 2019)**

ASEAN Regional Forum (ARF) Workshop on Marine Debris Management for Sustainable Fisheries and Food Security

Lobster Study Tour which includes site visits to key lobster producers and lobster farming industry in Vietnam

Regional Workshop on Innovative Rice-fish and Climate Resilient Tilapia Farming in Asia-Pacific

Regional Consultation for Development of the ASEAN-SEAFDEC Common Position on the Proposed Listing of Commercial-Exploited Aquatic Species into the CITES Appendices

SEAFDEC Regional Fisheries Policy Network (RFPN) Member

IOTC Workshop on MCS/CDS Studies and Working Party on Implementation of Conservation and Management Measures (WPICMM)

6<sup>th</sup> Global Fisheries Enforcement Training Workshop (6<sup>th</sup> GFETW)

Workshop for Laboratories Participating in the PT Program

Global Supply Chain Roundtable (SR) Meeting in conjunction with the Boston Seafood Show

2<sup>nd</sup> ASEAN Regional Forum (ARF) Workshop on Enhancing Regional Maritime Law Enforcement Cooperation and 11<sup>th</sup> ASEAN Regional Forum Inter-Sessional Meeting on Maritime (ISM on MS)

13<sup>th</sup> Tuna Data Workshop (TDW13)





ASEAN Meeting in Combating IUU Fishing in partnership with the EU  
(Bangkok, Thailand - April 2019)

3rd Fisheries Management and Marine Environmental Protection Workshop

ASEAN EU Meeting on Combatting IUU Fishing

23rd International Seaweed Symposium

Regional Meeting on Way Forward of the Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Toward 2020

14<sup>th</sup> Informal Consultation of State Parties to the UN Fish Stocks Agreement

Age Determination Using Vertebra for Sharks and Rays



ASEAN Meeting in Combating IUU Fishing in partnership with the EU  
(Bangkok, Thailand - April 2019)

1<sup>st</sup> RPOA 2.0 Consultative Workshop, 3rd Regional Priority Setting Workshop, MEWG Meeting and CT Atlas Workshop

9<sup>th</sup> ASEAN Shrimp Alliance (ASA) Meeting

11<sup>th</sup> ASEAN Fisheries Consultative Forum (AFCF)

27<sup>th</sup> ASEAN Fisheries Working Group on Fisheries (ASWGF)





MECO-TECO Technical Discussions on Fisheries  
(Taipei, Taiwan - November 2019)



9th Asian Shrimp Alliance  
(Da Nang City, Vietnam - June 2019)

## **Reports and photos courtesy of BFAR Regional Offices, National Technology Centers, Central Office Divisions and Units**

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